

Amyand's Hernia: a Case Report at University Hospital of Parakou and Review of the Literature

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Abstract- Amyand's hernia is the presence of the appendix in a hernial sac. This is a very rare condition estimated at 0.6 to 1% of cases of inguinal hernia in adults. We report here the case of a 32-year-old patient admitted to emergency department for painful right inguinal swelling. The diagnosis of incarcerated right inguinal hernia was established hence the surgical indication. It was discovered an inflammatory appendix of 17 cm in length. He underwent from an appendectomy and a herniorraphy according to Bassini's procedure by inguinal approach. The patient was discharged from hospital on the 4th postoperative day uneventfully.

Keywords- Amyand's Hernia, Appendectomy, Herniorraphy

I. INTRODUCTION

Acute appendicitis is a common cause of acute abdomen. Preoperative diagnosis is usually made without difficulty. This is not the case in the presence of an atypical localization of the appendix, especially in a hernial sac. This is called the Amyand's Hernia whether the appendix is inflamed or not [1]. This is an extremely rare situation, estimated at 0.6 to 1% of cases of inguinal hernia in adults [2]. We report here a case of Amyand's hernia observed in the department of general surgery of University Hospital of Parakou.

II. CLINICAL CASE

A 32 years old patient consulted with emergency departments for severe pain that occurred 2 days before admittance on a right inguinal swelling that has been existing for about three months. He also mentioned two episodes of food vomiting and a fever. There is no surgical history. On examination, his temperature was 38.4 ° C, pulse rate 92 beats/min (regular), blood pressure 120/85 mmHg. We found a swelling in the right inguinal region, non-expansive and non-impulsive to cough, irreducible. The rest of the abdomen is soft and painless. His laboratory values showed a haemoglobin of 12.7 g/dL and WBC of 9700/mm³. The diagnosis of incarcerated inguinal hernia was established and the patient underwent surgery.

An inguinal approach was made. At the opening of the sac, we found an erectile appendix covered by fine vessels (Fig.1). After dividing the mesoappendix, the appendix measured 17 cm in length (Fig. 2). A classic appendectomy and parietal repair according to Bassini's procedure are performed. The patient was discharged on the 4th postoperative day uneventfully.

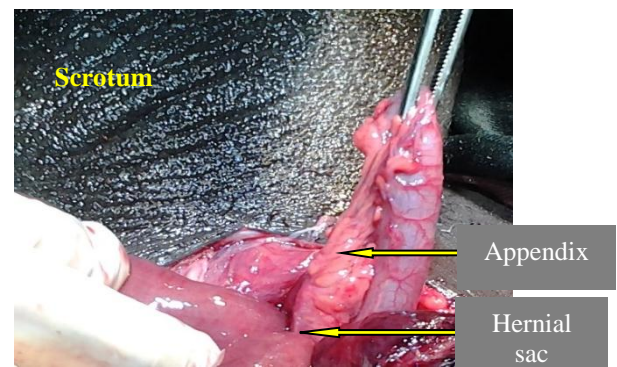


Figure 1. Inflammatory appendix found in the hernial sac.



Figure 2. Appendix after dissection, measuring 17 cm in length

III. DISCUSSION

The presence of the appendix in a hernial sac is an extremely rare situation. Claudius Amyand (1680-1740), surgeon at the St. George's Hospital in London and surgeon to King George II (1683-1760) realized in 1736 the first appendectomy on an appendix perforated by an ingested needle and located in an inguinal hernia, in an 11-year-old child. Since then, this type of hernia is attached to its name. Amyand's hernia is more prevalent in male individuals [3]. Indeed, inguinal hernia mainly affects men whereas women are much affected by femoral hernias hence they are more prone to De Garengeot hernia (presence of the appendix in a femoral hernia). It presents bimodal distribution as regards age range, affecting principally neonates and patients above the age of 70 [3]. Our patient was 32 years old. Leopoldo C et al. [4] also reported Amyand's hernia in two patients aged of 39 and 45 years. Due to the anatomical position of the appendix, the pathology usually locates in the right inguinal region. However, a case of Amyand's left hernia has been reported in India [5]. This would be linked to a situs invertus, a malrotation or an abnormally mobile cecum [5].

Pathophysiology is still unknown but Abu-Dalu and Urca [6] support the scenario in which as soon as the appendix enters the sac it becomes vulnerable to trauma and is ultimately retained there by adhesions. Its blood supply may subsequently be cut off or significantly reduced resulting in inflammation and bacterial overgrowth. The leukocytosis and the operative aspects of the appendix in our patient prove the existence of that inflammation.

The most frequent clinical condition for the discovery of Amyand's hernia is the urgency of hernial pathology. This may be the hernial strangulation or peritonitis localized to the hernial sac. The clinical picture in our case was an incarcerated inguinal hernia as observed by other authors [4, 7]. However, Vijaya KK et al. [2] reported recently in 2015 a case of Amyand's hernia in a patient scheduled for uncomplicated right inguinal hernia. In reality it is the occurrence of the pain on the inguinal swelling that leads to the surgical sanction and the discovery of the appendix in the hernial sac. So the diagnosis is most of time, made during surgery as emphasized in the literature [2, 3]. Since the year 2000, some cases were diagnosed before operation [8, 9] thanks to abdominal computed tomography. Indeed, the use of computed tomography facilitates the identification of inguinal hernias and sagittal and coronal reconstructions are particularly useful for the visualization of a blind-ending tubular structure arising from the cecum and entering the inguinal canal, representing the vermiform appendix within the hernial sac [10]. But computed tomography is not a routine practice, especially in the emergency context mentioned previously.

In our observation, the appendix measured 17 cm in length, which confirms the statement of Vijaya et al. [2] that an abnormally long appendix is a predisposing factor in the occurrence of Amyand's hernia. The surgical management depends on operative findings. In 2007, Losanoff and Basson [11] proposed a therapeutic classification (Table I) according to which each type requires a specific approach. Our patient presented acute appendicitis in an inguinal hernia that

corresponds to the type 2 of Amyand's hernia. So we performed an appendectomy and herniorrhaphy by inguinal approach as recommended by Losanoff and Basson [11]. The first laparoscopic reduction of an Amyand's hernia was reported in 2010 by Vermillion JM et al. [12].

A healthy appendix in an inguinal hernia is a factor of good prognosis [2]. Some authors have encountered some complications such as pneumonia, epididymitis, urinary tract infection [13], and abdominal sepsis with delayed wound closure due to retroperitoneal abscess [14]. No complications were observed in our patient. Mortality is estimated between 14 and 30% and is usually associated with septic complications [7].

TABLE I. THERAPEUTIC CLASSIFICATION OF AMYAND'S HERNIA BY LOSANOFF AND BASSON [11]

Type	Description	Management
Type 1	Normal appendix in an inguinal hernia	Hernia reduction, mesh placement by inguinal approach
Type 2	Acute appendicitis in an inguinal hernia with no abdominal sepsis	Appendectomy, herniorrhaphy by inguinal approach, no mesh
Type 3	Acute appendicitis in an inguinal hernia with abdominal and abdominal wall sepsis	Laparotomy, appendectomy, herniorrhaphy, no mesh
Type 4	Acute appendicitis in an inguinal hernia with abdominal concomitant pathology (tumor or abdominal masses)	Same as type 3 with management of concomitant disease

IV. CONCLUSION

This is the first case of Amyand's hernia diagnosed and documented in our surgical department. This case is particularly interesting because of three reasons: the presence of the appendix in a hernial sac, which is very rare, the inflammation of this appendix and the unusual length of the organ.

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